

# WHAT WAS IT ?

## THE PAWPAW TREE *ASIMINA TRILOBA*

Also Known as the: Indiana, West Virginia, Kansas, Kentucky, Michigan, Missouri, Ozark, Poor Man's or Prairie Banana

### NIH RECORD

### 2010 NIH EARTH DAY "NAME IT" CONTEST

#### THE CONTEST CLUES

- IT's in the Neighborhood.  
**Pawpaws are native to much of the eastern U.S. including Maryland.**
- Development and the clearing of mature trees have eliminated IT from many of our urban areas.  
**Development activities have removed native pawpaws and mature trees of other species that provide needed shade for pawpaws, which are part of the understory vegetation.**
- IT is so well known that it has a town named after IT. You can get there by driving exactly 104.40 miles from the NIH campus.  
**Of course that would be the town of Pawpaw located in Morgan County, West Virginia.**



The mystery photo of "IT" in the NIH Record article was a cross section of the ripe fruit showing the seeds and tasty yellow pulp.

#### PLANT BIOLOGY

- Pawpaws are shrubs or small trees seldom exceeding a height of about 12 meters.
- They are of the genus *Asimina* and belong to the plant family Annonaceae, a small group of plants that includes several other tropical species that are important as fruit crops such as the cherimoya, custard apple, sweetsop and soursop.
- Flowers are unusual in appearance and emit a fetid odor that attracts pollinators.
- The fruit is about 5-16cm long and looks like a small banana but in botanical terms IT is considered to be a berry. When unripe the fruit is green. It turns yellow and then brown when ripe. It's filled with many inedible black seeds.
- The tree is the only larval host for the zebra swallowtail butterfly.

#### A NATURAL INSECTICIDE

- Leaves, bark, twigs and seeds contain acetogenins – compounds that can be used to make organic insecticides.
- Powdered seeds are used by Native Americans to control lice and also in some shampoos for the same purpose.
- Requires no pesticide use in cultivation.



Pawpaw Seeds

#### CONSERVATION STATUS

- There are several species of pawpaws. The common pawpaw, *Asimina triloba*, a deciduous tree has a wide range, extending from southern Ontario to northern Florida and eastern Texas. Most of the other species are evergreen and grow in southeastern states.
- Development and clearing of land and forests are the primary threats to native pawpaw populations.
- The four-petal pawpaw *Asimina tetramera*, limited to a small range in the Palm Beach area of Florida is now endangered with a total remaining population of only about 500 plants. Unlike the common pawpaw, this plant is adapted to disturbance, in the absence of which it becomes shaded out by oaks and pines.
- There is increasing interest in cultivation of pawpaws as fruit crops and many cultivars are being developed.

#### POTENTIAL CANCER TREATMENT

- One of the reasons that some forms of cancer resist treatment is that while chemotherapeutic drugs can kill most of the cells in tumors, a small percentage of them may be multidrug resistant (MDR) cells. These are not destroyed by chemotherapy, can multiply after treatment and eventually form new tumors that are entirely MDR.
- Chemicals called acetogenins in extracts from pawpaws have been shown in laboratory studies to have effectiveness against MDR cells.
- A major impediment to further testing and potential development of these compounds as drugs is their extremely low solubility in water and body fluids. This may prevent distribution in the body and explain the lack of activity shown in animal studies.

#### FOOD USES

- Eaten as a fresh, dried or frozen fruit with a flavor similar to banana and mango. Can be made into fruitcakes, jams, jellies, wine and beer.
- A subsistence food of early pioneers and members of the Louis and Clark Expedition. Chilled fruit a favorite of George Washington and Thomas Jefferson.
- Nutritious; contains more protein than most fruit.

IMPROVING ENVIRONMENTAL AWARENESS BY:  
**MAKING *IT* REAL, MAKING *IT* INTERESTING, MAKING *IT* FUN!**  
Office of Research Facilities, Division of Environmental Protection

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